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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/714,471  
Filing Date: November 15, 2003  
Appellant(s): HE ET AL.

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Michael E. Mauney  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 2/27/08 appealing from the Office action mailed 7/25/07.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by

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reference characters. The brief is deficient because application page 7, line 15 does not support the claimed pressure range of less than 10 torr.

#### **(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

#### **WITHDRAWN REJECTIONS**

The following ground of rejection is not presented for review on appeal because it has been withdrawn by the examiner:

Claim 23 is rejected under 35 U.S.C. 102(b) as anticipated by Wennerstrum et al. (U. S. Pat. 4,882,851).

#### **NEW GROUND(S) OF REJECTION**

Claims 1, 3-10,21,23 and 27-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. **See section (9) below which details this new ground of rejection.**

#### **(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

#### **(8) Evidence Relied Upon**

4,882,851	Wennerstrum et al.	11-1989
4,107,049	Sano et al.	08-1978
5,546,678	Dhaemers	08-1996
6,085,443	Hunter et al.	07-2000
6,410,889	Davis et al.	06-2002

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

**New Ground of Rejection:**

Claims 1, 3-10, 21, 23 and 27-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed limitation regarding the air pressure in the chamber is “less than 10 TORR” in claims 1 and 23 constitutes new matter which is not supported by the originally filed specification. The originally filed specification only discloses that the pressure inside the chamber drops below *approximately* 10 TORR (emphasis added also see page 7, line 16 of the specification). The term “approximately 10 TORR” could be interpreted as greater than 10 TORR, for example 11 TORR, or lower than 10 TORR, for example 9 TORR, or equal to 10 TORR. By claiming “less than 10 TORR” after original filing of the application, applicant either broadened or narrowed the scope of the invention. Therefore, this broadened or narrowed amended version of the numerical range of the pressure constitutes new matter not supported by the originally filed specification.

**Previously Applied Rejections To Be Reviewed On Appeal:**

Claim 23 is rejected under 35 U.S.C. 103(a) as obvious over Wennerstrum et al. (U. S. Pat. 4,882,851).

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Patent to Wennerstrum et al. shows an apparatus for drying a sample comprising a sealable chamber 10, cold trap 34, a pump 40 for creating a vacuum and heating means 12 for supplying electromagnetic energy to the interior of the sealable chamber 10, pressure sensors 76 for measuring the vacuum and control means 42 which are arranged same as claimed. The apparatus of Wennerstrum et al. can be used to heat porous sample of construction material. Patent to Wennerstrum et al. also suggests that in most drying operations, the vacuum is pulled until the pressure in the drying chamber is between ten and thirty-five torr (col. 13, lines 22-23). Thus, while Wennerstrum et al. express a preference for the pressure level inside the drying chamber between 10 and 35 torr, at the same time it provides the motivation for one of ordinary skill in the art to focus on the vacuum pressure level for the dryness degree of the drying chamber. According to applicant's own disclosure, the chamber is completely dry if the pressure inside the chamber drops below approximately 10 torr (see page 7, line 16 of the specification). Therefore, while the apparatus of Wennerstrum et al. is operated at pressure of 10 torr inside the drying chamber, the chamber is completely dried. A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed.cir. 1985). Therefore, it would have been obvious to one skill in the art to operate the sealable chamber 10 of Wennerstrum et al. at the pressure less than 10 torr in order to obtain optimal drying result, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

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Claims 27-28, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. (U. S. Pat. 4,882,851) in view of Dhaemers (U. S. Pat. 5,546,678).

The drying apparatus of Wennerstrum et al. as above includes all that is recited in claims 27-28 and 30-31 except for the an infrared lamp for heating the chamber and means for measuring humidity in the chamber. Dhaemers teaches a drying apparatus and method with infrared light 73 for heating the chamber 41 (see Fig. 6 and Col. 6, lines 3-6) and a humidistat 112 for measuring humidity in the chamber 41 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the microwave generator 12 of Wennerstrum et a. with an infrared light as taught by Dhaemers in order to supply the heating energy in the infrared range and to provide the drying apparatus and method of Wennerstrum et al. with a humidistat as taught by Dhaemers in order to measuring the humidity in the drying chamber and therefore improve the drying efficiency.

Claims 29, 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. (U. S. Pat. 4,882,851) in view of Dhaemers (U. S. Pat. 5,546,678) as applied to claims 5, 28 above, and further in view of Hunter et al. (U. S. Pat. 6,085,443).

The drying apparatus of Wennerstrum et al. as modified by Dhaemers as above includes all that is recited in claims 29, 33-34 except for a load cell for weighing the sample and thus determining the amount of moisture in the sample. Hunter et al teach a concept of using a load cell 50 for weighing the product in bin 40 and thus determining the moisture of the product in bin 40 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the drying apparatus and method of Wennerstrum et al. with a load cell as taught by Hunter et al. in order to weigh the sample and determine the

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amount of the moisture in the sample. With regard to the claim 33, it would have been obvious to one having ordinary skill in the art to weigh the samples on an external scale since applicants have not disclosed that location of weighing solves any state problem in a new or unexpected way or is for any particular purpose which is unobvious to one of ordinary skill and it appears that the claimed feature for removing samples from the chamber and weighing the sample on an external scale does not distinguish the invention over similar features in the prior art which weighing the sample in the chamber.

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. (U. S. Pat. 4,882,851) in view of Dhaemers (U. S. Pat. 5,546,678) as applied to claims 5, 28 above, and further in view of Davis et al (U. S. Pat. 6,410,889).

The drying apparatus and method of Wennerstrum et al. as modified by Dhaemers as above includes all that is recited in claim 32 except for a heating pad for the heating the chamber. Davis et al teach a concept of using a heating pad<sup>132</sup> for heating the chamber 122 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the drying apparatus and method of Wennerstrum et al. with a heating pad as taught by Davis et al. in order to improve the heating efficiency.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. (U. S. Pat. 4,882,851) in view of Sano et al. (U. S. Pat. 4,107,049).

Wennerstrum et al. a method for drying a sample comprising the steps of placing a sample into a sealable chamber 10; creating a vacuum (by pump 40) inside the chamber by evacuating air from the inside of the chamber; passing evacuated air from the sealable chamber through a cold trap 34; and heating the interior of the sealable chamber by supplying heat (thru



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means 12) to the interior of the sealable chamber 10 same as claimed. Sano et al teach a method for drying porous material with the step of vacuuming the sealable chamber 5 under a pressure of 0.01 to 10 torr. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the drying method of Wennerstrum et al. to include the step of drying the porous material within the sealable chamber under pressure less than 10 torr as taught by Sano et al. in order to obtain an optimal complete drying result.

Claims 3-5, 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. (U. S. Pat. 4,882,851) in view of Sano et al. (U. S. Pat. 4,107,049) as applied to claim 1 above and further in view of Dhaemers (U. S. Pat. 5,546,678).

The drying method of Wennerstrum et al. as modified by Sano et al. as above includes all that is recited in claims 3-5, 7-8 except for the an infrared lamp for heating the chamber and means for measuring humidity in the chamber. Dhaemers teaches a drying method using infrared light 73 for heating the chamber 41 (see Fig. 6 and Col. 6, lines 3-6) and a humidistat 112 for measuring humidity in the chamber 41 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the microwave generator 12 of Wennerstrum et a. with an infrared light as taught by Dhaemers in order to supply the heating energy in the infrared range and to provide the drying method of Wennerstrum et al. with a step of monitoring the vacuum in the chamber by humidistat as taught by Dhaemers in order to measuring the humidity in the drying chamber and therefore improve the drying efficiency.

Claims 6, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. (U. S. Pat. 4,882,851) in view of Sano et al. (U. S. Pat. 4,107,049) and Dhaemers (U. S.

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Pat. 5,546,678) as applied to claims 5 above, and further in view of Hunter et al. (U. S. Pat. 6,085,443).

The drying apparatus and method of Wennerstrum et al. as modified by Sano et al. and Dhaemers as above includes all that is recited in claims 6, 9 except for a load cell for weighing the sample and thus determining the amount of moisture in the sample. Hunter et al teach a concept of using a load cell 50 for weighing the product in bin 40 and thus determining the moisture of the product in bin 40 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the drying method of Wennerstrum et al. with a step of weighing the sample (by a load cell) as taught by Hunter et al. in order to weigh the sample and determine the amount of the moisture in the sample. With regard to the claim 9, it would have been obvious to one having ordinary skill in the art to weigh the samples on an external scale since applicants have not disclosed that location of weighing solves any state problem in a new or unexpected way or is for any particular purpose which is unobvious to one of ordinary skill and it appears that the claimed feature for removing samples from the chamber and weighing the sample on an external scale does not distinguish the invention over similar features in the prior art which weighing the sample in the chamber.

Claims 10, 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum et al. (U. S. Pat. 4,882,851) in view of Sano et al. (U. S. Pat. 4,107,049) and Dhaemers (U. S. Pat. 5,546,678) as applied to claims 5 above, and further in view of Davis et al (U. S. Pat. 6,410,889).

The drying method of Wennerstrum et al. as modified by Sano et al. and Dhaemers as above includes all that is recited in claims 10, 21 except for a heating pad for the heating the

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chamber. Davis et al teach a concept of using a heating pad 132 for heating the chamber 122 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the drying method of Wennerstrum et al. with a step of using heating pad to heat the chamber as taught by Davis et al. in order to improve the heating efficiency.

Claims 1 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (U. S. Pat. 4,107,049) in view of Wennerstrum et al. (U. S. Pat. 4,882,851).

Sano et al. show an apparatus and a method for drying a porous sample comprising a sealable chamber 5, a pump (not show) for creating a strong vacuum inside the chamber by evacuating air from the inside of the chamber after it is sealed until air pressure inside the chamber is less than 10 torr and heating means (2-4) for heating the interior of the sealable chamber 5 same as claimed. Wennerstrum et al. teach a drying apparatus and method with a cold trap 34 for trapping moisture in the evacuated air. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the drying apparatus and method of Sano et al. with cold trap as taught by Wennerstrum et al. in order to trap the moisture in the evacuated air.

Claims 3-5, 7-8 and 27-28, 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (U. S. Pat. 4,107,049) in view of Wennerstrum et al. (U. S. Pat. 4,882,851) as applied to claims 1 and 23 as above and further in view of Dhaemers (U. S. Pat. 5,546,678).

The drying apparatus and method of Sano et al. as modified by Wennerstrum et al. as above includes all that is recited in claims 3-5, 7-8, 27-28 and 30-31 except for the an infrared

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lamp for heating the chamber and means for measuring humidity in the chamber. Dhaemers teaches a drying apparatus and method with infrared light 73 for heating the chamber 41 (see Fig. 6 and Col. 6, lines 3-6) and a humidistat 112 for measuring humidity in the chamber 41 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the heating means 2-4 of Sano et al. with an infrared light as taught by Dhaemers in order to supply the heating energy in the infrared range and to provide the drying apparatus and method of Sano et al. with a humidistat as taught by Dhaemers in order to measuring the humidity in the drying chamber and therefore improve the drying efficiency.

Claims 6, 9, 29, 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (U. S. Pat. 4,107,049) in view of Wennerstrum et al. (U. S. Pat. 4,882,851) and Dhaemers (U. S. Pat. 5,546,678) as applied to claims 5, 28 above, and further in view of Hunter et al. (U. S. Pat. 6,085,443).

The drying apparatus and method of Sano et al. as modified by Wennerstrum et al. and Dhaemers as above includes all that is recited in claims 6, 9, 29, 33-34 except for a load cell for weighing the sample and thus determining the amount of moisture in the sample. Hunter et al teach a concept of using a load cell 50 for weighing the product in bin 40 and thus determining the moisture of the product in bin 40 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the drying apparatus and method of Sano et al. with a load cell as taught by Hunter et al. in order to weigh the sample and determine the amount of the moisture in the sample. With regard to the claims 9 and 33, it would have been obvious to one having ordinary skill in the art to weigh the samples

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on an external scale since applicants have not disclosed that location of weighing solves any state problem in a new or unexpected way or is for any particular purpose which is unobvious to one of ordinary skill and it appears that the claimed feature for removing samples from the chamber and weighing the sample on an external scale does not distinguish the invention over similar features in the prior art which weighing the sample in the chamber.

Claims 10, 21, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano et al. (U. S. Pat. 4,107,049) in view of Wennerstrum et al. (U. S. Pat. 4,882,851) and Dhaemers (U. S. Pat. 5,546,678) as applied to claims 5, 28 above, and further in view of Davis et al (U. S. Pat. 6,410,889).

The drying apparatus and method of Sano et al. as modified by Wennerstrum et al. and Dhaemers as above includes all that is recited in claims 10, 21, 32 except for a heating pad for the heating the chamber. Davis et al teach a concept of using a heating pad<sup>132</sup> for heating the chamber 122 same as claimed. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the drying apparatus and method of Sano et al. with a heating pad as taught by Davis et al. in order to improve the heating efficiency.

#### **(10) Response to Argument**

##### **Claim 23**

Claim 23 was rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103 (a) as obvious over Wennerstrum et al, U.S. Patent 4,882,851. Since the rejection under 35 USC 102 (b) has been withdrawn, the examiner will only answer the rejection under 35 USC 103 below.

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On pages 12-14 of the Brief, the appellant explains what the Wennerstrum patent entails but also argues that Wennerstrum patent does not reduce the pressure inside the chamber below 10 Torr so that the chamber is completely dry and no moisture in the system. Examiner disagrees. According to applicant's disclosure, the chamber is completely dry if the pressure inside the chamber drops below approximately 10 TORR (see lines 16-17 of page 7 of the specification). Wennerstrum discloses that the pressure in the drying chamber is between ten and thirty-five torr (col. 13, lines 22-23). Therefore, when the Wennerstrum patent operates at the pressure of 10 TORR, the chamber is also "complete dry" same as the applicant's. Since the broad claim 23 at issue does not include any recitation regarding completely dry without moisture. Therefore, there is no necessity to further address issues not present in the claims. With regard to the claimed pressure at "less than 10 Torr", according to the supporting specification (line 16 of page 7), the applicant clearly states that the chamber is completely dry if the pressure inside the chamber drops below *approximately* 10 TORR (emphasis added). Patent to Wennerstrum et al. also suggest that in most drying operations, the vacuum is pulled until the pressure in the drying chamber is between ten and thirty-five torr (col. 13, lines 22-23). Therefore, while the apparatus of Wennerstrum et al. is operated at pressure of 10 torr inside the drying chamber, the chamber is completely dried same as applicants. A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. Titanium Metals Corp. of America v. Banner, 778 F.2d 775, 227 USPQ 773 (Fed.cir. 1985). Thus, while Wennerstrum et al. express a preference for the pressure level inside the drying chamber between 10 and 35 torr, at the same time it provides the motivation for one of ordinary

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skill in the art to focus on the vacuum pressure level for the dryness degree of the drying chamber. Therefore, it would have been obvious to one skill in the art to operate the sealable chamber 10 of Wennerstrum et al. at the pressure less than 10 torr in order to obtain optimal drying result, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233. Moreover, the appellant never explains any criticality of “less than 10 TORR”. Subsequently, the examiner takes a position that “less than 10 TORR” is merely a preferred pressure to obtain an optimal drying result as one desires. Since there is no criticality shown by the appellant that the claimed range of “less than 10 torr” achieves unexpected results relative to the prior art range, therefore, the pressure of “less than 10 TORR” is merely an arbitrary pressure as one desires to use to obtain whatever optimal results one desires.

Claims 27-28 and 30-31

Claims 27-28 and 30-31 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum '851 in view of Dhaemers, U. S. Patent #5,546,678.

On pages 14-15 of the Brief, the appellant disagrees with the examiner’s interpretation of Dhaemers patent. In particular, the appellant argues the propriety of the election of species requirement promulgated on June 23, 2004. However, this matter is a petitionable matter. The restriction requirement issue is irrelevant to the present appeal. The appellant must focus on the claims at issue. The appellant also questions whether or not Dhaemers is a prior art reference. The answer is affirmative because Dhaemers patent was issued on August 26, 1996 which is more than one year earlier than the applicant’s filing date.

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On pages 15-16 of the Brief, the appellant argues that the arrangement of using an infrared lamp to directly heat the sample chamber is not disclosed by the Wennerstrum or by the Dhaemers patents. Again, claims 27-28 and 30-31 recite nothing about “arrangement of using an infrared lamp to directly heat the sample chamber”. Therefore, this line of arguments is immaterial to the claims under appeal. The appellant also argues both Wennerstrum and Dhaemers do not address the central problem addressed and solved by the invention of completely and quickly drying a sample without affecting the material integrity of the sample. Dhaemers and Wennerstrum patent do not correct the essential deficiencies regarding the need to evacuate the chamber to a vacuum greater than 10 TORR nor to heat the chamber in a controlled fashion while maintaining the vacuum at a predetermined range. This line of arguments is not germane to the claims at issue. As stated in applicant’s specification, page 7, line 16, the chamber is completely dry when the pressure inside the chamber drops below approximately 10 TORR. Since the pressure inside the drying chamber of Wennerstrum is between ten and thirty-five torr, then Wennerstrum would be able to obtain a complete dried condition when the pressure inside the chamber is vacuumed to 10 TORR. Patent to Dhaemers is used by the examiner for the teaching of using infrared lamp as a suitable equivalent heater. Consequently, the examiner found claims 27-28 and 30-31 unpatentable over the prior art references under 35 USC 103. Since no substantive arguments are present, claims 27-28 and 30-31 will stand or fall with the independent claims.

#### Claims 29 and 33-34

Claims 29 and 33-34 were rejected under Wennerstrum '851, Dhaemers '678, and further in view of Hunter et al U. S. patent #6,085,443. The Hunter patent was added for the purpose of



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teaching the concept of using a load cell. On page 16 of the Brief, the appellant argues that by adding Hunter does nothing to overcome the deficiencies of Wennerstrum which teaches away from a vacuum greater than 10 TORR nor does it do anything to overcome the deficiencies of combining Dhaemers with Wennerstrum and fails to disclose the use of infrared energy to directly heat a sealed vacuum chamber. The appellant incorporates by reference the arguments made in response to the rejections of Claims 23, 27-28 and 30- 31.

The examiner disagrees with the appellant's arguments for the reasons as stated in the rejections above. The examiner must point out that the arguments are not germane to the claims at issue because claims 29 and 33-34 do not recite any limitations regarding the use of infrared energy to directly heat a sealed vacuum chamber. Since no substantive arguments are present, claims 29 and 33-34 will stand or fall with the independent claims.

#### Claim 32

Claim 32 is rejected under 35 U.S.C. 103 as being unpatentable over the combination of Wennerstrum '851, Dhaemers '678, and Davis et al., U. S. Patent #6,410,889. On pages 16-17 of the Brief, the appellant argues that by adding a heating pad by Davis does nothing to overcome the deficiencies of Wennerstrum and Dhaemers as previously argued for claims 13, 27-28 and 30-31. Since no substantive arguments are present, claims 29 and 32-34 will stand or fall with the independent claims.

#### Claim 1

Claim 1 was rejected under 35 U.S.C. 103(a) as being unpatentable over Wennerstrum '851 in view of Sano et al., U. S. Patent #4,107,049.

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On pages 17-18 of the Brief, the appellant argues that Wennerstrum does not have a vacuum pump capable of evacuating a chamber below 10 TORR nor does it teach the desirability of doing so. The appellant also contends that the Sano patent is a process of producing semi-permeable membranes. It produces a wet membrane. The wet membrane is dried overnight at room temperature. The then dry membrane is placed in a vacuum vessel shown in Figure 1. Therefore, the appellant traverses the conclusion of the examiner that Sano teaches a method for drying porous material in a vacuum chamber with a pressure of .01 to 10 TORR. Sano does not teach drying in a vacuum chamber but uses the conventional method of drying in room temperature with exposure to air. The appellant in essence argues that there is no teaching to combine the prior art patents to Wennerstrum and Sano patents as suggested by the examiner. The appellant wants to know why one would combine the prior art references without using hindsight. The examiner totally disagrees with the appellant's narrow interpretations of prior art patents to Wennerstrum and Sano. Wennerstrum patent shows a method for drying a sample comprising the steps of placing a sample into a sealable chamber 10; creating a vacuum (by pump 40) inside the chamber by evacuating air from the inside of the chamber; passing evacuated air from the sealable chamber through a cold trap 34; and heating the interior of the sealable chamber by supplying heat (thru means 12) to the interior of the sealable chamber 10 same as claimed. Sano et al teach a method for drying porous material with the step of vacuuming the sealable chamber 5 under a pressure of 0.01 to 10 torr. It is true that the porous material of Sano et al. is dried at room temperature first. However, the porous material of Sano et al. will be further dried by vacuum the air/gas containing moisture out of the chamber under a pressure of 0.01 to 10 torr. The porous material of Sano et al. will also be dried when it is heated

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under the high temperature of the plasma. Both steps of vacuuming the chamber and exposing the porous material in the plasma will inherently perform a function of drying the porous material. Therefore, it is the examiner's position that it would have been obvious to one skilled in the art to modify the drying method of Wennerstrum et al. to include the step of drying the porous material within the sealable chamber under pressure less than 10 torr as taught by Sano et al. in order to obtain an optimal complete drying result. The examiner must point out that in the formulation of obviousness rejections under 35 USC 103 above, it is in view of the combined teaching of the prior art references, one skilled in the art would have found it to be obvious to combine because the results would have been predictable (KSR International Co. v. Teleflex, Inc. 82 USPQ 2d 1385 (2007)).

Claims 3-5 and 7-8

Claims 3-5 and 7-8 were rejected under the combination of Wennerstrum '85 I, in view of Sano '049, and further in view of Dhaemers '678. The Examiner uses the combination of Wennerstrum and Dhaemers and then adds the infrared light as taught by Dhaemers. On page 18 of the Brief, the appellant argues that even if Dhaemers is appropriate prior art in light of the restriction requirement imposed by the Examiner, Dhaemers still fails to disclose either actually using infrared light to directly heat the vacuum chamber or the desirability to do so. The examiner again disagrees with the appellant's argument because the election of species has nothing to do with whether or not Dhaemers US Pat. 5,546,678 issued on August 20, 1996 is a proper prior art. Again, the traversal of election of species requirement of June 23, 2004 is a petitionable matter. Since no substantive arguments are present, claims 3-5 and 7-8 will stand or fall with the

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independent claims.

Claims 6 and 9

Claims 6 and 9 were rejected under 35 U.S.C as being unpatentable over Wennerstrum '851, in view of Sand '049, Dhaemers '678, and further in view of Hunter. U. S. Patent 6,085,443. Hunter patent was added to teach the concepts of using a load cell for weighing a product. At the bottom of page 18 of the Brief, the appellant argues that by adding Hunter patent does nothing to remedy the essential deficiencies of Wennerstrum '851, Sand '049, and Dhaemers '678 as previously argued. Since no substantive arguments are present, claims 6 and 9 will stand or fall with the independent claims.

Claims 10 and 21

Claims 10 and 21 were rejected over the combination of Wennerstrum '851, Sane '049, Dhaemers '678, and further in view of Davis et al., U. S. Patent #6,410,889. The patent to Davis '889 was added to teach the concept of using a heating pad for heating the chamber as claimed. On page 19 of the Brief, the appellant argues that the insufficiency of the combination of Wennerstrum, Sane, and Dhaemers above and adding Davis does nothing to remedy the essential deficiency of the above references. Since no substantive arguments are present, claims 10 and 21 will stand or fall with the independent claims.

Claims 1 and 23

Claims 1 and 23 are rejected under 35 USC 103 as unpatentable over Sano '049 in view of Wennerstrum '851. On pages 19-20 of the Brief, the appellant traverses this rejection because Sane patent does not show a method or apparatus for drying porous materials inside a sample chamber by means of a vacuum. In particular, the appellant disagrees with the examiner's

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interpretation of the transformer (2) and the electrodes (3 and 4) as a heating means (2-4). The appellant goes on to argue that the examiner's interpretation of the prior art patent to Sano is based on the applicant's own teaching. Examiner disagrees that Sano et al patent does not show a method or apparatus for drying porous materials inside a sample chamber by means of a vacuum. Patent to Sano et al. discloses that the porous material is placed in a vacuum vessel under a pressure of 0.01 to 10 torr and is exposed to the plasma. The porous material of Sano et al. will be inherently dried by vacuum the air/gas containing moisture out of the chamber under a pressure of 0.01 to 10 torr. The porous material of Sano et al. will also be inherently dried when it is exposed to plasma and be heated under the heat generated by the plasma. Both steps of vacuuming the chamber under a pressure of 0.01 to 10 torr and exposing the porous material in the plasma will inherently perform a function of drying the porous material. The examiner also disagrees with the appellant's narrow interpretation of the Sano patent because the examiner must accord the claim language with its broadest reasonable interpretation. In view of the broad claims at issue, the examiner merely interprets anything that generates heat as claimed "heating means" for heating a sealable chamber 5 under strong vacuum 7. In this case, one skilled in the art would know that plasma normally will generate substantial heat. Therefore, the interpretation of plasma generator 3, 4 as a heating means is reasonable. The definition of plasma can be found in any physics text books. Again, it should be noted that there is no structure defined in the claims as to what constitutes "heating means". It must be acknowledged that apparatus claim 23 does contain "means plus function" language but the applicant never invoked the sixth paragraph of 35 USC 112 provision during the prosecution of the application. If the applicant does invoke

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the sixth paragraph of 35 USC 112 provision, Dhaemers patent shows such claimed “means plus function” heating means same as claimed.

Claims 3-5, 7-8, 27-28 and 30-31

Claims 3-5, 7-8, 27-28, and 30-31 were rejected as unpatentable under 35 U.S.C. 103(a) over the combination of Sano '049, Wennerstrum '851, and Dhaemers '678. On page 20 of the Brief, the appellant indicates the arguments regarding the inappropriateness of combining Sano with Wennerstrum and the deficiencies of the combination with Dhaemers patent were previously made. Those arguments are incorporated by reference herein and will not be repeated here. Since no substantive arguments are present, claims 3-5, 7-8, 27-28 and 30-31 will stand or fall with the independent claims.

Claims 6, 9, 29 and 33-34

Claims 6, 9, 29 and 33-34 are rejected under 35 USC 103 as unpatentable over Sano '049 in view of Wennerstrum '85 1, Dhaemers '678 with the addition of Hunter et al., U. S. Patent #6,085,443. On page 20 of the Brief, the appellant argues that the added Hunter patent is used to show the concept of using a load cell. However, the addition of Hunter does nothing to remedy the essential deficiencies of the combination of Wennerstrum, Sano, and Dhaemers. The appellant indicates the arguments regarding the deficiencies of the combination of Wennerstrum, Sano, and Dhaemers have been previously made at length and incorporates them by reference herein. Since no substantive arguments are present, claims 6, 9, 29 and 33-34 will stand or fall with the independent claims.

Claims 10, 21 and 32

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Claims 10, 21 and 32 are rejected under 35 USC 103 over the combination of Sano '049, Wennerstrum '851, Dhaemers '678 with the addition of Davis '889. On pages 20-21 of the Brief, the appellant argues that Davis was added to show a heating pad for heating the chamber. By adding Davis does not remedy the essential deficiencies of the combination of Wennerstrum, Sano, and Dhaemers as argued above. The appellant now incorporates those arguments herein by reference. Since no substantive arguments are present, claims 10, 21 and 22 will stand or fall with the independent claims.

#### APPLICANT'S EVIDIENCE

During the prosecution of this application, the case of KSR International Co. v. Teleflex, Inc. 127 S. Ct.1727; 82 USPQ 2d 1385 (2007) was decided by the Supreme Court. On page 20 of the Brief, the appellant correctly explains this important Supreme Court case law. The examiner agrees with the appellant's explanation.

On pages 21-22 of the Brief, the appellant argues the sufficiency of three Rule 132 Declarations filed on Sep. 28, 2006 to overcome the 35USC 103 rejections. In the Office actions of Jan. 29, 2007, Interview of March 19, 2007 and July 25, 2007, the examiner had carefully considered and found all three Rule 132 Affidavits were insufficient. In particular, the examiner found all three Affidavits contain merely affiants' opinions without supporting test data and conclusion with respect to the criticality of claimed "less than 10 TORR" pressure. The Affidavits are also not commensurate to the scope of the broad claims presented. In order words, there is no nexus between the contents of the Affidavits and the broad claims at issue. With regard to the long-felt need Affidavits, the appellant simply fails to explain and prove any criticality of claimed "less than 10 TORR" over the prior art references. The main thrust of the

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arguments in this appeal is the prior art references fail to suggest or show an operational pressure in the sealable chamber is “less than 10 TORR” in which the examiner has held to be new matter not supported by the original filed specification. The Affidavits simply fail to mention the criticality of this alleged claimed numerical range of “less than 10 TORR”. In view of the broad claims presented, the examiner is not convinced that Affidavits contain no nexus with the claimed numerical value of “less than 10 TORR” would overcome the obviousness rejections under appeal.

### CONCLUSION

#### 102 Rejection - Claim 23

On page 22 of the Brief, the appellant concludes that Wennerstrum patent can not support a 35 USC 102 rejection. This 102 rejection has been withdrawn in this appeal.

#### Claim 23 - Obvious Rejections

On pages 22-12 of the Brief, the appellant concludes that the examiner has used hindsight in formulating the obviousness rejections. In particular, the examiner used the applicant's teaching in concluding the pressure at “less than 10 TORR” is obvious. Applicant also argues that Wennerstrum vacuum dryer teaches away from a vacuum less than 10 TORR and teaches away from completely drying a sample. The examiner disagrees for the reasons set forth above and will not repeat those arguments here. However, the examiner must take notice that the claimed pressure “less than 10 TORR” is new matter not supported by the original specification. The originally filed specification simply fails to suggest the claimed pressure at “less than 10 TORR”.

#### Dhaemers Reference



On pages 23-24 of the Brief, the appellant argues the difference between the elected species of Fig. 2 and the non-elected species. The appellant also argues the examiner's obviousness rejections were based on the applicant's own teaching. The examiner disagrees for the reasons as set forth above and will not repeat those arguments here.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section **(9)** above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

**(1) Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

**(2) Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any

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amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Respectfully submitted,

/Jiping Lu/  
Primary Examiner

A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:

/KAREN M. YOUNG/

Director, Technology Center 3700

Conferees:

/Kenneth B Rinehart/

Supervisory Patent Examiner, Art Unit 3743

/Greg Vidovich/

TQAS, TC 3700

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